WHAT IS CLAIMED IS:

1. A method, comprising:

obtaining a signal indicative of an image;

forming an original histogram indicative of the signal, said histogram including information indicative of numbers of dynamic range levels in the signal;

forming a mapping function, which relates each dynamic range level to positions of peaks in the original histogram; and

scaling said original histogram based on said mapping function.

2. A method as in claim 1, wherein said mapping function forms a curve which has areas of highest slope near said peaks in said original histogram.

3. A method as in claim 1, wherein there are two of said peaks.

4. A method as in claim 2, wherein said forming a mapping function comprises determining center portions of said peaks, and characterizing dynamic range levels based on their relationship with said center portions of said peaks.

5. A method as in claim 4, further comprising determining widths of peak areas in said original histogram, and weighting based on said widths of said peak areas.

6. A method as in claim 1, further comprising forming a new histogram based on said scaling, and displaying an image based on said new histogram.

7. A method as in claim 1, wherein said obtaining an image comprises using an active pixel sensor to obtain an image.

8. A method as in claim 6, wherein said mapping function is monotonous.

9. A method as in claim 1, wherein said dynamic range levels are gray scale levels, and said forming a mapping function comprises forming a curve which is based on the equation

$$f(g) = \frac{-1+\exp\frac{g-loc1}{w1}}{1+\exp\frac{g-loc1}{w1}} + \frac{-1+\exp\frac{g-loc2}{w2}}{1+\exp\frac{g-loc2}{w2}}$$

, where loc1 and w1 are respectively center points and widths of a first peak, and loc2 and w2 are respectively center points and widths of a second peak.

10. A method as in claim 9, wherein said scaling comprises scaling the mapping curve according to

$$m(g)=(2^n-1)x\frac{f(g)-f(\min(g))}{f(mas(g))-f(\min(g))}$$

where f(g) is the mapping curve, and n is the number of grey levels to which the mapping curve is to be scaled.

11. A method as in claim 1, wherein said scaling comprises scaling the mapping curve according to

$$m(g)=(2^n-1)x\frac{f(g)-f(\min(g))}{f(mas(g))-f(\min(g))}$$

Where f(g) is the mapping curve, and n is the number of dynamic range levels to which the mapping curve is to be scaled.

12. A method as in claim 6, wherein said mapping function has a form that preserves relative brightnesses of a transformed image.

13. A method as in claim 12, wherein the new histogram has peaks in proportional locations to those in the original histogram, and a relationship between heights of said peaks of the new histogram is the same as a relationship between heights of peaks in the original histogram.

14. An apparatus, comprising:

an image acquisition element, obtaining an original signal indicative of an image of a scene; and

a processor, modifying said original signal to produce a modified signal, wherein the modified signal has fewer levels of dynamic range than the original signal, said processor operating by calculating an original image histogram, calculating a mapping function for the original image histogram which comprises a monotonous function having changes in said function which occur predominately at areas of peaks in said original image histogram, and forming a new compressed histogram based on said mapping function.

15. An apparatus as in claim 14, wherein said image acquisition device includes an active pixel sensor.

16. An apparatus as in claim 14, wherein said processor forms a mapping curve which has areas of highest change near said areas of peaks in the image histogram.

17. An apparatus as in claim 16, wherein there are two of said peaks.

18. An apparatus as in claim 16, wherein there are n of said peaks.

19. An apparatus as in claim 14, wherein said mapping function depends on center portions of said peaks and widths of said peaks.

20. An apparatus as in claim 19, wherein said processor carries out said mapping function by comparing a current gray level with a level at a peak.

21. An apparatus as in claim 20, wherein said processor forms said mapping function by weighting said function using said widths.

22. An apparatus as in claim 14, further comprising a display device, having the capability of displaying n levels, where n is less than a number of levels in the original signal.

23. A method, comprising:

obtaining a higher dynamic range signal;

forming a histogram between components of the signal indicative of dynamic range levels in the signal, and numbers of those dynamic range levels;

finding peaks in said histogram; and

transforming said histogram into a modified histogram which keeps a similar specified relationship between said peaks and which represents a lower dynamic range signal.

24. A method as in claim 23, wherein said transforming comprises forming a mapping function based on the original histogram, and using said mapping function to form a modified histogram.